REMARKS/ARGUMENTS

Claim Status Summary

Claims 1-7, 9-11, and 13-17 are rejected under 35 U.S.C. §103(a), as being unpatentable over Telewski (U.S. Patent No. 6,021,315) in view of Kildal (U.S. PGPUB 20040183547).

Claims 12 and 20 are rejected under 35 U.S.C. §103(a), as being unpatentable over Telewski (U.S. Patent No. 6,021,315) in view of Kildal (U.S. PGPUB 2004/0183547), and in further view of Leather et al. (U.S. PGPUB 2006/0055592)

Claims 8, 18-19, and 21-29 are cancelled in the previous paper.

Claims 3 and 14 are cancelled in the paper; thus, the rejections over claims 3 and 14 are moot in view of the claim cancellation.

35 U.S.C. §103(a)

Claims 1-7, 9-11, and 13-17 are rejected under 35 U.S.C. §103(a), as being unpatentable over Telewski (U.S. Patent No. 6,021,315) in view of Kildal (U.S. PGPUB 20040183547). Claims 12 and 20 are rejected under 35 U.S.C. §103(a), as being unpatentable over Telewski (U.S. Patent No. 6,021,315) in view of Kildal (U.S. PGPUB 2004/0183547), and in further view of Leather et al. (U.S. PGPUB 2006/0055592). Claims 3 and 14 are cancelled in the paper; thus, the rejections over claims 3 and 14 are moot in view of the claim cancellation. The Applicant respectfully disagrees for the rejections over claims 1-2, 4-7, 9-13, 15-17, and 20 for reasons discussed below.

The 35 U.S.C. §103(a) states the following:

> "(a) A patent may not be obtained though the invention is not identically disclosed or described as set for the in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be nagatived by the manner in which the invention was made."

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Patent Examiners Should Interpret Claims in Light of Specification

The court has recently indicated that the PTO should apply the principles of *Phillips v. AWH* during prosecution — rather than the PTO's current practice of giving claims their "broadest reasonable interpretation." *In re Johnston* (Fed. Cir. 2006). The Patent Office may use a dictionary in defining the patent applicant's claim terms only when the patent specification did not otherwise provide any interpretation.

The Cited References, Combined or Individually, Do Not Disclose Every Recited Limitations in Claim 1

The amended claim 1 recites the following limitations:

"A system for multi-path simulation comprising:

a vector signal generator for generating a signal;

an attenuating device coupled to the signal generator for attenuating the signal and generating an attenuated signal to simulate an attenuation resulting from a transmission of the signal;

a shielded anechoic chamber comprising:

an antenna coupled to the attenuating device for transmitting the attenuated signal, wherein the antenna can be shifted to **simulate a phase shift** between a direct path and a main indirect path of the system;

a reflector for reflecting the attenuated signal to generate a reflected signal; and

a control unit **coupled directly** to the vector signal generator and the attenuating device for controlling a generation of the signal and **stepwise** adjusting an attenuating range of the attenuating device."

The current invention discloses multiple-path simulation within a shielded anechoic changer to avoid external electromagnetic interference and other uncontrollable transmission. The present invention also employs an attenuating device to attenuate transmitted signals, thereby simulating the signal attenuation during transmission; thus, the real electromagnetic environment can be simulated without limits of the chamber size.

Telewski discloses a system and method for testing of wireless communication devices. Telewski discloses a waveguide with an opening receiving end (column 8, line 57) and only a conducting/reflective interior (column 7, 2nd paragraph). The Office Action admitted that Telewski fails to disclose the system for multi-path simulation wherein the antenna can be shifted to simulate a phase shifting (Office Action, page 5, 2nd paragraph). Applicant respectfully submits that in addition to shifting phases by rotating the antenna, Telewski also dos not disclose **a vector signal generator**, an **internal wall** absorbing and reducing the reflected signal's strength, and a control unit **coupled directly** to the signal generator and the attenuating device.

Telewski does not disclose a **vector signal generator**. The limitation of the vector signal generator was previously recited in claim 3, and now it is recited in the amended claim 1. The Office Action alleged that Telewski discloses a vector generator in Telewski's column 1, lines 10-23 (Office Action, page 6, 3rd paragraph). Applicant respectfully disagrees. The cited section in Telewski discloses only devices with different frequencies. The cited section does not explicitly disclose any devices with vector signals. If the Office is inserting that the cited section inherently discloses the vector signals, Applicant respectfully submits that the inherency requires that the claimed element be "**necessarily** present"; the mere fact that a certain thing may result

from a given set of circumstances is not sufficient. MPEP 2112, Section IV further provides that the Office must provide rationale or evidence tending to show inherency. Therefore, for the reason discussed above, Applicant respectfully submits that the cited section does not disclose the recited vector signal generator.

Telewski does not disclose a control unit **coupled directly** to the vector signal generator and the attenuating device for discloses controlling a generation of the signal and adjusting an attenuating range of the attenuating device. The Office Action alleged that Telewski discloses a central computer which is the recited control unit (Office Action, page 5, lines 9-11). Applicant respectfully disagrees. The current invention recites a control unit (figure 2, structure 23) **coupled directly** to the vector signal generator (figure 2, structure 21) and the attenuating device (figure 2, structure 22); thus, the control unit can control the signal generation from the signal generator and adjust the attenuating range of the attenuating device. The CAFC has explicitly defined the term of "couple to" as a direct connection between two components; the CAFC states that "the term 'coupled to' in the phrase 'second stage input terminal coupled to the first stage output terminal' defines a connection between the TGMs. In other words, 'coupled to' in the context of this claim phrase defines the connection between two of the TGMs essential for a series multiplexer" (IN RE Translogic Technology, Inc., 2006)

The cited reference does not disclose the recited structure along with the associated functions. Telewski discloses a central computer system connecting to a processor, and the processor connecting to the transmitter and receiver (Telewski, figure 3). Telewski does not disclose the structure of the direct coupling as recited in the claim. Namely, Telewski's central computer system is not directly coupled to RF attenuators 112A-C as shown in figure 3 of Telewski. According to the decision of In Re Translogic, the Office Action cannot interpret the cited reference as disclosing the recited directly coupling, or suggesting the recited directly coupling. Therefore, the cited reference does not disclose or suggest the recited limitation as alleged in the Office Action.

Telewski further does not disclose the functions along with this structure limitation. The Office Action alleged that Telewski discloses controlling a generation of the signal and adjusting an attenuating range of the attenuating device at Telewski, column 5, lines 38-43 (Office Action, page 5, last line of the 1st paragraph). Applicant respectfully disagrees. Applicant respectfully submits that the cited section only discloses that the attenuators can be adjusted to provide appropriate signal levels, the cited section does not disclose how the attenuators are adjusted; in particular, the cited section does not disclose that the recited structural limitation to control the **stepwise** adjustment. The Specification discloses that the control unit 23 stepwise adjusts the attenuation setting of the step attenuator. This stepwise adjustment simulates the attenuation of signals of the generator 21 during transmission in a communication space (Specification, page 6, 2nd paragraph). The cited reference does not disclose any stepwise adjustment as recited in the claim. Therefore, for the reason discussed above, Applicant respectfully submits that the cited section does not disclose the recited control unit coupled directly to the signal generator and the attenuating device for controlling a generation of the signal and adjusting an attenuating range of the attenuating device.

Kildal does not cure those deficiencies. The Office alleged that Kildal discloses the recited antenna providing the phase shifting simulation (Office Action, page 5, last paragraph). Applicant respectfully disagrees. Applicant respectfully submits that Kildal does not disclose the recited antenna rotation providing the phase shifting simulation, Kildal further does not disclose the phase shifting between a direct path and a main indirect path, and Kildal further does not disclose any of the deficiencies discussed above.

The current invention recites a shielded chamber with a reflector and an antenna. The current invention provides that the antenna provides a phase shifting simulation by switching the communication path between a direct path and an indirect path (Specification, page 5, last paragraph). The current invention further recites a **phase shifting** between a **direct path** and a **main indirect path** (Specification, page 5, last

paragraph). Kildal discloses a method and an apparatus to measure the radiation efficiency (column 2, paragraph 11). Kildal discloses that the most important performance parameter for an antenna is the radiation efficiency; and Kildal further discloses that the radiation efficiency are effected by the reflection in transmission, efficiency reduction at antenna, and efficiency reduction from the external environment (column 1, paragraph 4). Kildal measures the radiation efficiency under the reflections. Kildal does not simulate any phase shifting. If the Office is inserting that the cited reference inherently discloses the phase shifting simulation, Applicant respectfully submits that the inherency requires that the claimed element be "**necessarily** present"; the mere fact that a certain thing may result from a given set of circumstances is not sufficient. MPEP 2112, Section IV further provides that the Office must provide rationale or evidence tending to show inherency. Furthermore, Kildal does not disclose any vector signal generator or any control unit **coupled directly** to the signal generator and the attenuating device for discloses controlling a generation of the signal and adjusting an attenuating range of the attenuating device.

Office has the Burden of Proof

The Office has the initial burden of setting forth a prima facie case of obviousness, and to do that the Office must identify **specific** teachings, suggestions or motivations in the prior art for making the claimed combination. Merely pointing out that various elements by themselves are known in the prior art is insufficient. Nor is it sufficient to merely state that combination of the missing elements is obvious because their combination would be beneficial. If that were the standard nothing would ever be patentable.

Therefore, for the reasons discussed above, Applicant respectfully submits that the cited references, combined or individually, do not disclose every recited limitation as required under 35 U.S.C. 103(a); thus, Applicant respectfully requests the Office issuing favorable re-consideration accordingly.

Rejections Over Claims 2, 4-7, and 9

Claims 2, 4-7, and 9 depend on claim 1; thus, they incorporate every recited limitation in claim 1. For the same reasons discussed above; Applicant respectfully requests the Office issuing favorable re-consideration over claims 2, 4-7, and 9 accordingly.

Rejection Over Claim 12

Claim 12 is rejected under 35 U.S.C. §103(a), as being unpatentable over Telewski (U.S. Patent No. 6,021,315) in view of Kildal (U.S. PGPUB 2004/0183547), and in further view of Leather et al. (U.S. PGPUB 2006/0055592). Applicant respectfully disagrees. Claim 12 depends on claim 1; thus, it incorporates every recited limitation in claim 1.

The Office admitted that Telewski and Kildal do not disclose the quite zone, and the Office alleged that Leather discloses the quiet zone and can be combined with Telewski and Kildal. Applicant respectfully disagrees. Leather discloses a room lined with material to absorb radio frequency or microwave energy (paragraph 63). Leather discloses that the radio frequency will be effectively reduced at the quite zone by the room's lining (paragraph 63). As discussed above, Telewski explicitly states that its waveguide's inner wall reflects the electromagnetic energy rather than absorbing the electromagnetic energy, and Kildal explicitly states measuring the radiation efficiency with a transmission reflection. Therefore, one would not adapt Leather's quite zone into Telewski and Kildal as alleged in the Office Action. In addition, Applicant respectfully submits that Leather does not cure any of other deficiencies of Telewski and Kildal as discussed above. For the reasons discussed above; Applicant respectfully requests the Office issuing favorable re-consideration over claim 12 accordingly.

The Cited References, Combined or Individually, Do Not Disclose Every Recited Limitations in Claim 13

The amended claim 13 recites the following limitations:

"A method for multi-path simulation comprising:

generating a signal utilizing a vector signal generator;

attenuating the signal to generate an attenuated signal for simulating an attenuation resulting from a transmission of the signal;

transmitting the attenuated signal by an antenna, wherein the antenna is located in a shielded anechoic chamber with a reflector, and the reflector reflects the attenuated signal to generate a reflected signal; and

receiving the attenuated signal and the reflected signal by a communication device located within the shielded anechoic chamber;

shifting the antenna to simulate a phase shift between a direct transmission path and a main indirect transmission path of the signal;

rotating a turntable to change a **reception azimuth** of the communication device;

adjusting a position of the antenna and changing the phase shift between the direct transmission path and the main indirect transmission path of the signal; and

utilizing a control unit **coupled directly** to the vector signal generator and the attenuating device."

The current invention discloses multiple-path simulation with a shielded anechoic changer to avoid external electromagnetic interference and other uncontrollable transmission. The present invention also employs an attenuating device to attenuate transmitted signals, thereby simulating the signal attenuation during transmission; thus, the real electromagnetic environment can be simulated without limits of the chamber size.

Telewski discloses a system and method for testing of wireless communication devices. Telewski discloses a waveguide with an opening receiving end (column 8, line 57) and a conducting/reflective interior (column 7, 2nd paragraph). The Office Action admitted that Telewski fails disclosing the system for multi-path simulation wherein the

antenna can be shifted to simulate a phase shifting (Office Action, page 8, 2nd paragraph). Applicant respectfully submits that in addition to shifting phases by rotating the antenna, Telewski also dose not disclose generating signals by **a vector signal generator**, rotating a turntable to change a **reception azimuth** of the communication device, and a control unit **coupled directly** to the signal generator and the attenuating device.

Telewski does not disclose a **vector signal generator**. The limitation of the vector signal generator was previously recited in claim 3, and now it is recited in the amended claim 1. The Office Action alleged that Telewski discloses a vector generator in Telewski's column 1, lines 10-23 (Office Action, page 7, last paragraph). Applicant respectfully disagrees. The cited section in Telewski discloses only devices with different frequencies. The cited section does not explicitly disclose any devices with vector signals. If the Office is inserting that the cited section inherently discloses the vector signals, Applicant respectfully submits that the inherency requires that the claimed element be "**necessarily** present"; the mere fact that a certain thing may result from a given set of circumstances is not sufficient. MPEP 2112, Section IV further provides that the Office must provide rationale or evidence tending to show inherency. Therefore, for the reason discussed above, Applicant respectfully submits that the cited section does not disclose the recited vector signal generator.

Telewski does not disclose a control unit **coupled directly** to the signal generator and the attenuating device for discloses controlling a generation of the signal and adjusting an attenuating range of the attenuating device. The Office Action alleged that Telewski discloses a central computer which is the recited control unit (Office Action, page 8, line 5). Applicant respectfully disagrees. The current invention recites a control unit (figure 2, structure 23) **coupled directly** to the signal generator (figure 2, structure 21) and the attenuating device (figure 2, structure 22); thus, the control unit can control the signal generation from the signal generator and adjust the attenuating range of the attenuating device. The CAFC has explicitly defined the term of "couple

to" as a direct connection between two components; the CAFC states that "the term 'coupled to' in the phrase 'second stage input terminal coupled to the first stage output terminal' defines a connection between the TGMs. In other words, 'coupled to' in the context of this claim phrase defines the connection between two of the TGMs essential for a series multiplexer" (IN RE Translogic Technology, Inc., 2006)

The cited reference does not disclose the recited structure along with the associated functions. Telewski discloses a central computer system connecting to a processor, and the processor connecting to the transmitter and receiver (Telewski, figure 3). Telewski does not disclose the structure of the direct coupling as recited in the claim. Namely, Telewski's central computer system is not directly coupled to RF attenuators 112A-C as shown in figure 3 of Telewski. According to the decision of In Re Translogic, the Office Action cannot interpret the cited reference as disclosing the recited directly coupling, or suggesting the recited directly coupling. Therefore, the cited reference does not disclose or suggest the recited limitation as alleged in the Office Action.

Telewski further does not disclose the functions along with this structure limitation. The Office Action alleged that Telewski discloses controlling a generation of the signal and adjusting an attenuating range of the attenuating device at Telewski, column 5, lines 38-43 (Office Action, page 8, 1st paragraph). Applicant respectfully disagrees. Applicant respectfully submits that the cited section only discloses that the attenuators can be adjusted to provide appropriate signal levels, the cited section does not disclose how the attenuators are adjusted; in particular, the cited section does not disclose that the recited structural limitation to control the **stepwise** adjustment. The Specification discloses that the control unit 23 stepwise adjusts the attenuation setting of the step attenuator. This stepwise adjustment simulates the attenuation of signals of the generator 21 during transmission in a communication space (Specification, page 6, 2nd paragraph). The cited reference does not disclose any stepwise adjustment as recited in the claim. Therefore, for the reason discussed above, Applicant respectfully submits

that the cited section does not disclose the recited control unit coupled directly to the signal generator and the attenuating device for controlling a generation of the signal and adjusting an attenuating range of the attenuating device.

Kildal does not cure those deficiencies. The Office alleged that Kildal discloses the recited antenna providing the phase shifting simulation (Office Action, page 8, 3rd paragraph). The Office further alleged that Kildal discloses rotating the turntable to change a reception azimuth of the communication device (Office Action, page 8, 3rd paragraph). Applicant respectfully disagrees. Applicant respectfully submits that Kildal does not disclose the recited antenna providing the phase shifting simulation, Kildal further does not disclose any of the deficiencies discussed above.

The current invention recites a chamber with a reflector. The current invention provides that the antenna provides a **phase shifting** and reception azimuth simulation by switching the communication path between a direct path and an indirect path, and rotating a turntable. Kildal discloses a method and an apparatus to measure the radiation efficiency (column 2, paragraph 11). Kildal discloses that the most important performance parameter is the radiation efficiency; and Kildal further discloses that the radiation efficiency are effected by the reflection in transmission, efficiency reduction at antenna, and efficiency reduction from the external environment (column 1, paragraph 4). Kildal measures the radiation efficiency under the reflections. Kildal does not simulate the **phase shifting**. The current invention further provides changing the **reception azimuth** by rotating a turntable. Kildal does not disclose changing the reception azimuth by rotating a turntable. Kildal discloses a TUT and head phantom on a rotate-able platform (Kildal, figure 6). Kildal discloses a rotate-able platform for improving measurement accuracy (Kildal, paragraph 43). Kildal's disclosure does not inherently disclose the reception azimuth as recited. As discussed above, Kildal measures the radiation efficiency; Kildal rotating the turntable to measure the radiation efficiency; Kildal does not disclose or suggest the operations as recited in the claim. If the Office is inserting that the cited section inherently discloses the phase shifting and

reception azimuth, Applicant respectfully submits that the inherency requires that the claimed element be "**necessarily** present"; the mere fact that a certain thing may result from a given set of circumstances is not sufficient. MPEP 2112, Section IV further provides that the Office must provide rationale or evidence tending to show inherency. Therefore, for the reason discussed above, Applicant respectfully submits that the cited section does not disclose the recited phase shifting and reception azimuth.

Furthermore, Kildal does not disclose any vector signal generator or any a control unit **coupled directly** to the signal generator and the attenuating device for discloses controlling a generation of the signal and adjusting an attenuating range of the attenuating device.

Office has the Burden of Proof

The Office has the initial burden of setting forth a prima facie case of obviousness, and to do that the Office must identify **specific** teachings, suggestions or motivations in the prior art for making the claimed combination. Merely pointing out that various elements by themselves are known in the prior art is insufficient. Nor is it sufficient to merely state that combination of the missing elements is obvious because their combination would be beneficial. If that were the standard nothing would ever be patentable.

Therefore, for the reasons discussed above, Applicant respectfully submits that the cited references, combined or individually, do not disclose every recited limitation as required under 35 U.S.C. 103(a); thus, Applicant respectfully requests the Office issuing favorable re-consideration accordingly.

Rejections Over Claims 15-17

Claims 15-17 depend on claim 13; thus, they incorporate every recited limitation in claim 13. For the same reasons discussed above; Applicant respectfully requests the Office issuing favorable re-consideration over claims 15-17.

Rejection Over Claim 20

Claim 20 is rejected under 35 U.S.C. §103(a), as being unpatentable over Telewski (U.S. Patent No. 6,021,315) in view of Kildal (U.S. PGPUB 2004/0183547), and in further view of Leather et al. (U.S. PGPUB 2006/0055592). Applicant respectfully disagrees. Claim 20 depends on claim 13; thus, it incorporates every recited limitation in claim 13.

The Office admitted that Telewski and Kildal do not disclose the quite zone, and the Office alleged that Leather discloses the quiet zone and can be combined with Telewski and Kildal. Applicant respectfully disagrees. Leather discloses a room lined with material to absorb radio frequency or microwave energy (paragraph 63). Leather discloses that the radio frequency will be effectively reduced at the quite zone by the room's lining (paragraph 63). As discussed above, Telewski explicitly states that its waveguide's inner wall reflects the electromagnetic energy rather than absorbing the electromagnetic energy, and Kildal explicitly states measuring the radiation efficiency with a transmission reflection. Therefore, one would not adapt Leather's quite zone into Telewski and Kildal as alleged in the Office Action. In addition, Applicant respectfully submits that Leather does not cure any of other deficiencies of Telewski and Kildal as discussed above. For the reasons discussed above; Applicant respectfully requests the Office issuing favorable re-consideration over claim 20 accordingly.

Conclusion

Claims 1-2, 4-7, 9-13, 15-17, and 20 are pending in this application. In view of the reasons stated above, Applicant respectfully requests a favorable reconsideration and issuing allowance accordingly. Examiner is invited to contact the attorney on record to expedite the prosecution in pursuance of allowance.

Respectfully submitted,
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